

## CLAIMS

1. A distortion compensation table creation method comprising:

5 a step of finding a distortion component generated in an amplified signal when a baseband signal is amplified by relating frequency to power of said baseband signal;

a step of converting said distortion component found by relating frequency to said power so as to be related  
10 to time and said power;

a step of finding an amplitude component and phase component in found said distortion component converted so as to be related to time and said power for each said power;

15 a step of finding a distortion compensation signal that has an amplitude component whereby an amplitude component in found said distortion component is an inverse amplitude with respect to an amplitude component of said amplified signal when said distortion component is not  
20 present and a phase component whereby a phase component in said distortion component is an inverse phase with respect to a phase component of said amplified signal when said distortion component is not present; and

a step of relating found said distortion  
25 compensation signal and said power and performing storage in a table as compensation signal generation information for selecting said distortion compensation signal that suppresses said distortion component.

2. The distortion compensation table creation method according to claim 1, further comprising:

5 a step of relating said power to said distortion compensation signal when current said power is rising with respect to past said power and performing generation as rising-time compensation signal generation information;

10 a step of relating said power to said distortion compensation signal when current said power is falling with respect to past said power and performing generation as falling-time compensation signal generation information; and

15 a step of storing said rising-time compensation signal generation information and said falling-time compensation signal generation information in a table as said compensation signal generation information.

3. A distortion compensation method comprising:

20 a step of finding a distortion component generated in an amplified signal resulting from amplifying a baseband signal with an amplifier by relating frequency to power of said baseband signal prior to a distortion component suppression operation;

25 a step of converting said distortion component found by relating frequency to said power so as to be related to time and said power;

a step of finding an amplitude component and phase

component in said distortion component converted so as to be related to time and said power for each said power;

5 a step of finding a distortion compensation signal that has an amplitude component whereby an amplitude component in found said distortion component is an inverse amplitude with respect to an amplitude component of said amplified signal when said distortion component is not present and a phase component whereby a phase component in said distortion component is an inverse phase with respect to a phase component of said amplified signal  
10 when said distortion component is not present;

a step of relating found said distortion compensation signal and said power and performing storage in a table as compensation signal generation information  
15 for selecting said distortion compensation signal that suppresses said distortion component;

a step of measuring power of a baseband signal at a time of said distortion component suppression operation;

20 a step of selecting said distortion compensation signal by referencing said compensation signal generation information using information of measured said power;

a step of combining said baseband signal and selected said distortion compensation signal; and

25 a step of suppressing with said distortion compensation signal said distortion component generated by amplifying with said amplifier said baseband signal with which said distortion compensation signal has been

combined.

4. The distortion compensation method according to claim 3, further comprising:

5           a step of relating said power to said distortion compensation signal when current said power is rising with respect to past said power and performing generation as rising-time compensation signal generation information;

10           a step of relating said power to said distortion compensation signal when current said power is falling with respect to past said power and performing generation as falling-time compensation signal generation information;

15           a step of storing said rising-time compensation signal generation information and said falling-time compensation signal generation information in a table as said compensation signal generation information;

            a step of selecting said distortion compensation  
20 signal by referencing said rising-time compensation signal generation information using information of said power when measured said power of said baseband signal is on an upward trend, and selecting said distortion compensation signal by referencing said falling-time  
25 compensation signal generation information using information of said power when measured said power of said baseband signal is on a downward trend.

5. A transmitting method comprising:

a step of finding a distortion component generated in an amplified signal when a baseband signal is amplified with an amplifier by relating frequency to power of said baseband signal prior to a distortion component suppression operation;

a step of converting said distortion component found by relating frequency to said power so as to be related to time and said power;

10 a step of finding an amplitude component and phase component in found said distortion component converted so as to be related to time and said power for each said power;

a step of finding a distortion compensation signal that has an amplitude component whereby an amplitude component in found said distortion component is an inverse amplitude with respect to an amplitude component of said amplified signal when said distortion component is not present and a phase component whereby a phase component in said distortion component is an inverse phase with respect to a phase component of said amplified signal when said distortion component is not present;

20 a step of relating found said distortion compensation signal and said power and performing storage in a table as compensation signal generation information;

a step of measuring transmission power of a baseband signal at a time of said distortion component suppression operation;

a step of selecting said distortion compensation signal by referencing said compensation signal generation information using information of measured said baseband signal power;

5 a step of combining said baseband signal and selected said distortion compensation signal;

a step of suppressing with said distortion compensation signal combined with said baseband signal said distortion component generated by amplifying with  
10 said amplifier said baseband signal with which said distortion compensation signal has been combined; and

a step of transmitting said baseband signal in which said distortion component has been suppressed by said distortion compensation signal.

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6. The transmitting method according to claim 5, further comprising:

a step of relating said power to said distortion compensation signal when current said power is rising  
20 with respect to past said power and performing generation as rising-time compensation signal generation information;

a step of relating said power to said distortion compensation signal when current said power is falling  
25 with respect to past said power and performing generation as falling-time compensation signal generation information;

a step of storing said rising-time compensation

signal generation information and said falling-time compensation signal generation information in a table as said compensation signal generation information; and

5 a step of selecting said distortion compensation signal by referencing said rising-time compensation signal generation information using information of said power when measured said power of said baseband signal is on an upward trend, and selecting said distortion compensation signal by referencing said falling-time  
10 compensation signal generation information using information of said power when measured said power of said baseband signal is on a downward trend.